

5      **METHOD AND APPARATUS FOR  
MINIMIZING SPECTRAL INTERFERENCE  
DUE TO WITHIN AND BETWEEN SAMPLE VARIATIONS  
DURING *IN-SITU* SPECTRAL SAMPLING OF TISSUE**

**ABSTRACT**

10    An apparatus and method for reproducibly interfacing a living tissue sample  
to the measurement probe of a spectrometer instrument *in-situ* minimizes  
spectral interference related to sampling variations. A minimal contact  
subject interface includes supports replaceably mounted on a base. An  
optical coupling means, such as a fiber optic probe, contacts the  
15    measurement site through a probe aperture in the base. During use, a  
subject rests an extremity on the support elements, so that the extremity is  
reproducibly positioned and supported in relation to the optical coupling  
means. The supports have a small contact area, minimizing contact with the  
skin at the measurement site. The interface module is adjustable to fit any  
20    subject.

By reproducibly positioning and supporting the body appendage using  
minimal contact supports, spectral interference due to variations in  
placement, applied pressure, and temperature transients secondary to  
25    contact with the interface module are greatly minimized.